MEETING MINUTES
LIGNITE RESEARCH COUNCIL
November 17, 2005
Best Western Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:
Steve Benson, Energy & Environmental Research Center
Warren Candy, Minnesota Power
Randel Christmann, State Senate – Dist. 33
Kevin Cramer, ND Public Service Commission
John Dwyer, Lignite Research Council
Tom Durham ,Westmoreland Coal Co.
Bob Engler, Luscar Ltd.
Layton Freborg, State Senator
L. David Glatt, ND Department of Health
Shane Goettle, ND Department of Commerce
Daniel H. Hagemeister, ND Coal Conversion Counties
Carlyle Hillstrom, ND Farm Bureau
Mike Hummel, BNI Coal, Ltd.
Dennis James, North American Coal
Luther Kvernen, Minnkota Power Cooperative, Inc.
Vernon Laning, Basin Electric Power Cooperative
Al Lukes, Dakota Gasification Company
Ed Murphy, ND Geological Survey
Jan Rudolf, Otter Tail Power Company
Dave Smith, SaskPower
Andrea Stomberg, Montana-Dakota Utilities Co.
John Weeda, Great River Energy

OTHERS PRESENT:
Dave Allard, Lignite Energy Council
Michael Altavilla, Dakota Westmoreland Corporation
Jeff Burgess, Lignite Vision 21 Program
Jim Deutsch, ND Public Service Commission
Karlene Fine, North Dakota Industrial Commission
Vicki Gilmore, Lignite Energy Council
John Harju, Energy & Environmental Research Center
Stu Libby, Minnkota Power Cooperative
Mike Mann, University of North Dakota
Harvey Ness, Lignite Research Council
Ed Steadman, Energy & Environmental Research Center
Vicky Steiner, ND Coal Conversion Counties
Rich Voss, Great Northern Power Development

Lignite Research Council (LRC) chairman John Dwyer called the LRC meeting to order on November 17, 2005 at the Best Western Doublewood Inn, Bismarck, ND.

Approval of August 10, 2005 LRC Meeting Minutes

Dwyer asked for a motion to approve the minutes of the August 10, 2005 LRC meeting. Warren Candy so moved; seconded by Vernon Laning. Motion carried.

Financial Summary as of September 30, 2005

Harvey Ness, technical advisor for the North Dakota Industrial Commission (NDIC) and the LRC, summarized the Lignite Research, Development and Marketing Program (Program) financial information that is available on the NDIC web site. As of September 30, 2005, available funding balances from the Lignite Research Fund (LRF) for the 2005-2007 biennium were as follows: $347,853 for administration of the Program; $1,500,000 for non-matching funds for lignite marketing feasibility studies (LMFS); $931,618 in uncommitted funds for small research projects; and $6,959,902 for demonstration projects.

Available Funding for Small Research Projects for 2005-2007 Biennium

Karlene Fine said that there is $931,618 in available uncommitted Program funds for the small research projects category for the 2005-2007 biennium. She said that for the three grant rounds remaining for the 2005-2007 biennium, the NDIC recommendation is to allocate the $931,618 as follows: $310,539 for small research project funding for each of the three grant rounds. Fine said the $310,539 per grant round is a recommendation, not a mandate.

Lignite Research, Development and Marketing Program Updates

Ness said that from 1987 to the present, there have been 118 small research projects totaling $12.4 million in NDIC funds, 12 demonstration projects (excluding Lignite Vision 21 Program projects) totaling $13.6 million in NDIC funds, and four Lignite Vision 21 Program projects totaling $11.6 million in NDIC funds. Construction commitments for Lignite Vision 21 Program projects will be funded from the demonstration projects area. Ness said that the NDIC has made a $7.15 million commitment to MDU/Westmoreland for construction (Phase III).

Grant Round LV (55) Grant Application LRC-LV-A: "Plains CO_2 Reduction Partnership – Phase II"; Submitted by: Energy & Environmental Research Center; Principal Investigator: Edward N. Steadman; Request for: $720,000; Total Project Costs: $21,487,892; Project Duration: 4 Years.

Ness said that based on Phase I results, the objective of this Phase II proposal is to assess CO_2 sequestration opportunities by conducting field validation tests leading to commercial-scale sequestration, to assess economics, risk and monetary co-benefits of carbon sequestration, and to provide public carbon sequestration outreach. The proposal's goal is to mitigate risk to the coal-based power industry by taking a market- and incentive-based approach to carbon management.

Ness said that the three technical peer reviewers gave the proposal an average weighted score of 209.7 out of 250 points. (The weighted scores were 232 out of 250 points from reviewer 05-16, 195 out of 250 points from reviewer 05-17, and 202 out of 250 points from reviewer 05-18.) All three technical peer reviewers recommended that the project be funded.

As technical advisor, Ness said that due to the limited 2005-2007 biennium Program funds, his recommendation is that the proposal be funded at a level not to exceed a total contract value of $360,000 over four years, with requested payments not to exceed $90,000 per year. The contingency is confirmation of industrial cost share. Ness said that $180,000 of the $360,000 will come from Program funding in the 2005-2007 biennium and $180,000 will be from the 2007-2009 biennium funds. The initial request was for $720,000.

Ness said that the conflict-of-interest parties for this proposal are Great River Energy, Otter Tail Power Company, Xcel Energy, Excelsior, SaskPower and Great Northern Power Development.

Ed Steadman of the Energy & Environmental Research Center (EERC) gave a presentation in support of the proposal.

Grant Round LV (55) Grant Application LRC-LV-B: "Gasification of Lignite to Produce Liquid Fuels, Hydrogen, and Power"; Submitted by: Energy & Environmental Research Center; Principal Investigator: Dr. Steven A. Benson; Request for: $225,000; Total Project Costs: $2,640,380; Project Duration: 2 Years.

Ness said that the objective of the proposed project is to provide essential information on the impacts of moisture and inorganic impurities on gasifier and gas cleanup technology performance to support power generation and coal-to-liquid processes, addressing key technical challenges facing lignite by conducting small pilot-scale tests to determine cleanup issues of lignite-derived syngas for particulate, trace elements, mercury and sulfur removal as well as carbon dioxide and hydrogen separation for selected lignites. A larger-scale pilot transport reactor will be used to determine the impacts of impurities and moisture on advanced sulfur removal, hydrogen purification, and carbon dioxide separation processes.

Ness said that the three technical peer reviewers gave the proposal an average weighted score of 193.3 out of 250 points. (The weighted scores were 209 out of 250 points from reviewer 05-19, 212 out of 250 points from reviewer 05-20, and 159 out of 250 points from reviewer 05-21.) Technical peer reviewers 05-19 and 05-20 recommended that the project be funded; technical peer reviewer 05-21 did not recommended that the project be funded.

As technical advisor, Ness said that due to the limited 2005-2007 biennium Program funds, his recommendation is that the proposal be funded at a level not to exceed $40,000 in year one and $60,000 in year two. Total NDIC project cost share for the two-year project shall not exceed $100,000. Written confirmation of industry matching cost-share is required.

Ness said that the conflict-of-interest party for this proposal is TXU Generation Co., with other companies to be determined.

Dr. Steven Benson of EERC gave a presentation in support of the proposal.

Grant Round LV (55) Grant Application LRC-LV-C: "Controlling Mercury Emissions for Utilities Firing Lignite from North America – Summary Report"; Submitted by: Energy & Environmental Research Center; Principal Investigator: Dr. Steven A. Benson; Request for: $25,000; Total Project Costs: $45,315; Project Duration: 7 Months.

Ness said that the goal of the proposed project is to summarize the findings and conclusions of R&D projects on controlling mercury from lignite coals. Current information from numerous projects is not readily available and in a standard format. This project will compile key findings and conclusions for lignite industry use in identifying mercury control technology as a guide to economically manage mercury control in coal-fired power plants.

Ness said that the three technical peer reviewers gave the proposal an average weighted score of 221.7 out of 250 points. (The weighted scores were 212 out of 250 points from reviewer 05-22, 232 out of 250 points from reviewer 05-23, and 221 out of 250 points from reviewer 05-24.) All three technical peer reviewers recommended that the project be funded.

As technical advisor, Ness said that his recommendation is that the proposal be funded at a level not to exceed $25,000 (from the Program's Administration funds area).

Ness said that the conflict-of-interest parties for this proposal are Otter Tail Power Company and Minnkota Power Cooperative.

Dr. Steven Benson of EERC gave a presentation in support of the proposal.

Grant Round LV (55) Grant Application LRC-LV-D: "Power Systems Engineering Education & Research Program"; Submitted by: University of North Dakota Chemical Engineering Department; Principal Investigator: Dr. Michael Mann; Request for: $135,000; Total Project Costs: $450,000; Project Duration: 36 Months.

Ness said that the objective of the proposed project is to team the University of North Dakota Chemical Engineering Department with the Energy & Environmental Research Center to develop intellectual resources to the lignite industry by developing a focused educational program addressing all aspects of clean coal technologies and renewable technologies and the infrastructure to support future growth. The program will coordinate with the lignite industry to identify critical R&D and to provide input and instructors for new course development. Federal agencies are anticipated to participate. The program will complement the Electric Power Plant Technology Program at Bismarck State College.

Ness said that the three technical peer reviewers gave the proposal an average weighted score of 190.3 out of 250 points. (The weighted scores were 203 out of 250 points from reviewer 05-28, 191 out of 250 points from reviewer 05-29, and 177 out of 250 points from reviewer 05-30.) All three technical peer reviewers recommended that the project be funded.

As technical advisor, Ness said that due to the limited 2005-2007 biennium Program funds, he recommends that the proposal be funded at a level not to exceed the requested $15,000 in year one that includes confirmed matching industry cost-share, and $15,000 in year two, upon documentation of achieving benchmarks defined in year one (minimum recommended: an advisory committee, defined curriculum, student participation target, and appropriate R&D program.) Total NDIC contribution to the three-year project shall not exceed $45,000.

Ness said that the conflict-of-interest parties for this proposal are to be determined.

Dr. Michael Mann of the University of North Dakota Department of Chemical Engineering gave a presentation in support of the proposal.

Grant Round LV (55) Grant Application LRC-LV-E: "Silica-Titania Coated Packing for Superior H_g Capture: A Tailored Technology for Lignite-Fired Power Plants"; Submitted by: Mazyck Technology Solutions, LLC; Request for: $752,030; Total Project Costs: $1,504,060; Principal Investigator: Dr. David Mazyck; Project Duration: 10 Months,

Ness said that proposal LRC-LV-E was withdrawn prior to the Nov. 17, 2005 LRC meeting.

Motion for to Close LRC Meeting for Confidential Session to Consider Grant Round LV (55) Grant Application LRC-LV-F: "Lignite Vision 21 Feasibility Project - Phase III"; Submitted by: Great Northern Power Development; Principal Investigator: Charles Kerr; Request for:$ 1,310,443; Total Project Costs: $2,620,866; Project Duration: 15 Months.

Dwyer requested a motion to close the LRC meeting for the LRC members to proceed into confidential session to discuss confidential proposal LRC-LV-F ("Lignite Vision 21 Feasibility Project – Phase III"), pursuant to ND Century Code 54-17.5-06. Mike Hummel so moved; seconded by Kevin Cramer. Motion carried.

Motion to Open LRC Meeting

After a presentation and discussion concerning proposal LRC-LV-F, Dwyer requested a motion to end the confidential session and open the LRC meeting. Candy so moved; seconded by Carlyle Hillstrom. Motion carried. The meeting returned to open session.

Ballot Results

Dwyer announced that LRC members voted as follows concerning recommendations for NDIC funding of the proposals:

Grant Round LV (55) Grant Application LRC-LV-A: "Plains CO_2 Reduction Partnership – Phase I":
- **Fund:** 20 votes**.**
- **Do not fund**: 2 votes.

Grant Round LV (55) Grant Application LRC-LV-B: "Gasification of Lignite to Produce Liquid Fuels, Hydrogen, and Power":
- **Fund:** 18 votes.
- **Do not fund:** 4 votes.

Grant Round LV (55) Grant Application LRC-LV-C: "Controlling Mercury Emission for Utilities Firing Lignite from North America – Summary Report":
- **Fund:** 22 votes.
- **Do not fund:** 0 votes.

Grant Round LV (55) Grant Application LRC-LV-D: "Power Systems Engineering Education & Research":
- **Fund:** 10 votes.
- **Do not fund:** 11 votes.
- **Abstain:** 1 vote.

Grant Round LV (55) Grant Application LRC-LV-F: "Lignite Vision 21 Feasibility Project – Phase III":
- **Fund:** 18 votes.
- **Do not fund:** 4 votes.

NDIC Meeting – November 22, 2005

The LRC's recommendations concerning the Grant Round LV (55) requests will be considered by the NDIC at its meeting on Nov. 22, 2005.

Grant Round Proposal Application Deadlines for 2006

Dwyer said that the grant round proposal application deadline dates for 2006 will be April 1st and October 1st .

Presentation re: Proposed Transmission Authority Application Process

Jeff Burgess gave a presentation concerning the proposed ND Transmission Authority application process. The proposed process before building would include applications from project developers, an assessment by the NDIC, a notice of need, responses from transmission providers, a preliminary public interest determination, the NDIC hearing process, and the NDIC's decision.

Comments about the application process are to be submitted to Karlene Fine of the NDIC by Dec. 31, 2005.

NDIC Technical Advisor Harvey Ness to Retire

Harvey Ness, the technical advisor for the NDIC, will retire Dec. 31, 2005. Dwyer thanked Ness for his service and contributions to the lignite industry.

Adjournment

There being no further business, Dwyer requested a motion to adjourn the LRC meeting. Luther Kvernen so moved; seconded by Bob Engler. Motion carried.

Vicki Gilmore, Recording Secretary